

INTERNATIONAL SEARCH REPORT

PCT/US2004/006737

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04Q7/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04L G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

29 November 2004

Date of mailing of the international search report

30. 12. 04

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Location Services (LCS); Functional description; Stage 2 (3GPP TS 23.271 version 5.5.0 Release 5); ETSI TS 123 271" ETSI STANDARDS, EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE, SOPHIA-ANTIPO, FR, vol. 3-SA2, no. V550, December 2002 (2002-12), XP014007893 ISSN: 0000-0001	1-3, 6-19,21, 36, 38-40, 42,43
Y	paragraphs '03.1!, '04.2!, '4.3.1!	4,5,20, 37,41
A	paragraph '05.1! - paragraph '0006! paragraph '06.2! paragraph '6.3.2! - paragraph '6.3.4! paragraphs '7.1.1!, '7.1.2! paragraph '0009! - paragraph '9.2.2.3! -----	22-29
X	US 2001/009544 A1 (RUUTU VILLE ET AL) 26 July 2001 (2001-07-26)	1-3,6, 8-19,21
A	paragraph '0002! - paragraph '0007! paragraphs '0039!, '0040! paragraph '0057! - paragraph '0067! -----	7,36, 38-40, 42,43
A	US 6 195 557 B1 (HAYES STEPHEN ET AL) 27 February 2001 (2001-02-27) column 2, line 9 - column 3, line 59 column 4, line 34 - column 7, line 29 figures 3,5 -----	1-3,18, 19,26, 34,36,43
A	WO 01/37477 A (VERIZON LAB INC) 25 May 2001 (2001-05-25) page 1, line 17 - page 4, line 32 page 12, line 5 - line 28 -----	1-3,18, 19,26, 36,43
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 02/076118 A (SIGNALSOFT CORP) 26 September 2002 (2002-09-26)</p> <p>page 2, line 1 - line 24 page 3, line 15 - line 32 page 7, line 10 - page 15, line 34 page 44, line 3 - page 48, line 28 page 49, line 25 - line 28 page 52, line 6 - page 55, line 33 page 62, line 33 - page 63, line 13 figure 16</p>	<p>1,4-6, 18,20, 21, 24-30, 33, 35-37, 41-43</p>
A	<p>WO 00/76171 A (NOKIA NETWORKS OY ; RUUTU VILLE (FI); STAACK JENS (FI); TANG HAITAO (F) 14 December 2000 (2000-12-14) page 11, line 25 - page 12, line 8 page 13, line 24 - page 16, line 1 page 17, line 18 - line 23 page 18, line 9 - page 19, line 25 page 19, line 17 - page 23, line 10</p>	<p>1,13,15, 18,36, 38-40,43</p>
P,X	<p>WO 03/045084 A (KOKKONEN PETRI ; MAANOJA MARKUS (FI); NOKIA CORP (FI)) 30 May 2003 (2003-05-30)</p> <p>page 2, line 16 - page 3, line 24 page 8, line 21 - page 19, line 8 figure 1</p>	<p>1-3, 6-19,21, 36, 38-40, 42,43</p>
X	<p>US 2002/086682 A1 (NAGHIAN SIAMAK) 4 July 2002 (2002-07-04) paragraphs '0079!, '0086! paragraph '0088! - paragraph '0092! paragraph '0108! - paragraph '0112! paragraph '0116! - paragraph '0126! paragraph '0137! - paragraph '0144! figure 6</p>	<p>22,23</p>
X	<p>US 6 169 899 B1 (ROEL-NG MAYA ET AL) 2 January 2001 (2001-01-02)</p>	<p>24-29</p>
Y	<p>column 3, line 64 - column 4, line 30</p> <p>column 5, line 20 - column 6, line 18 figures 4A,4B</p>	<p>4,5,20, 37,41</p>
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 276 336 A (NORTEL NETWORKS LTD) 15 January 2003 (2003-01-15) paragraph '0004! - paragraph '0006! paragraph '0020! - paragraph '0025! paragraph '0036! - paragraph '0038! paragraph '0047! - paragraph '0049! -----	41
E	WO 2004/075591 A (QUALCOMM INC ; SHEYNBLAT LEONID (US)) 2 September 2004 (2004-09-02) paragraph '0078! - paragraph '0081! paragraph '0084! - paragraph '0087! paragraph '0090! -----	24-29
X	US 2002/019698 A1 (MATTILA ARTO ET AL) 14 February 2002 (2002-02-14) paragraphs '0004!, '0043! paragraph '0047! - paragraph '0054! paragraph '0058! paragraph '0060! - paragraph '0064! paragraph '0067! - paragraph '0069! paragraph '0079! claims 25,26 -----	30-35
X	US 6 185 427 B1 (COLEMAN DAVID ET AL) 6 February 2001 (2001-02-06) column 4, line 49 - line 64 column 5, line 28 - line 57 column 8, line 8 - line 39 claims 1,12 figures 2A,2B,7 -----	33,35

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3, 6-19, 21, 36, 38-40, 42, 43

The first group of inventions deals with several implementation details of the standardized location service architecture and method (see common concept below), mainly comprising:

- a) a first subinvention (Claims 2, 3 and 19) in which different security procedures are respectively applied for location determination and location disclosure
- b) a second subinvention (Claims 6, 21 and 42) dealing with the disclosure of cached information
- d) a third subinvention (Claims 7 and 36-43) dealing with entities in a home and visited network, e.g. in form of a user plane architecture (Claims 38-40)
- c) a fourth subinvention (Claims 9 and 10) which deals with different alternatives for locating location client and location server

2. claims: 22,23

The second invention defines a mobile station (and corresponding program product for) performing a first function for obtaining location information for the mobile station by interacting with at least one peer first function located in a first set of at least one network entity, and performing a second function for providing the location information by interacting with at least one peer second function located in a second set of at least one network entity.

3. claims: 4,5,20,24-29,37,41

The third invention provides respective LCS sessions (with separate session keys) for location determination and location provisioning.

4. claims: 30-35

In the fourth invention, obtained location information is provided to a first and a second application.

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